



#16/22

Sequence Listing

<110> Lasky, Laurence A.
Dowbenko, Donald J.

<120> Tyrosine Phosphorylated Cleavage Furrow-Associated
Proteins (PSTPIPs)

<130> P1066P2

<140> US 09/068,377

<141> 1998-05-08

<150> PCT/US98/01774

<151> 1998-01-30

<150> US 08/938,830

<151> 1997-09-29

<150> US 08/798,419

<151> 1997-02-07

<160> 73

<210> 1

<211> 415

<212> PRT

<213> Mus Musculus

<400> 1

Met	Met	Ala	Gln	Leu	Gln	Phe	Arg	Asp	Ala	Phe	Trp	Cys	Arg	Asp
1				5					10					15
Phe	Thr	Ala	His	Thr	Gly	Tyr	Glu	Val	Leu	Leu	Gln	Arg	Leu	Leu
				20					25					30
Asp	Gly	Arg	Lys	Met	Cys	Lys	Asp	Val	Glu	Glu	Leu	Leu	Arg	Gln
				35					40					45
Arg	Ala	Gln	Ala	Glu	Glu	Arg	Tyr	Gly	Lys	Glu	Leu	Val	Gln	Ile
				50					55					60
Ala	Arg	Lys	Ala	Gly	Gly	Gln	Thr	Glu	Met	Asn	Ser	Leu	Arg	Thr
				65					70					75
Ser	Phe	Asp	Ser	Leu	Lys	Gln	Gln	Thr	Glu	Asn	Val	Gly	Ser	Ala
				80					85					90
His	Ile	Gln	Leu	Ala	Leu	Ala	Leu	Arg	Glu	Glu	Leu	Arg	Ser	Leu
				95					100					105

Glu	Glu	Phe	Arg	Glu	Arg	Gln	Lys	Glu	Gln	Arg	Lys	Lys	Tyr	Glu	
				110					115					120	
Ala	Ile	Met	Asp	Arg	Val	Gln	Lys	Ser	Lys	Leu	Ser	Leu	Tyr	Lys	
				125					130					135	
Lys	Thr	Met	Glu	Ser	Lys	Lys	Ala	Tyr	Asp	Gln	Lys	Cys	Arg	Asp	
				140					145					150	
Ala	Asp	Asp	Ala	Glu	Gln	Ala	Phe	Glu	Arg	Val	Ser	Ala	Asn	Gly	
				155					160					165	
His	Gln	Lys	Gln	Val	Glu	Lys	Ser	Gln	Asn	Lys	Ala	Lys	Gln	Cys	
				170					175					180	
Lys	Glu	Ser	Ala	Thr	Glu	Ala	Glu	Arg	Val	Tyr	Arg	Gln	Asn	Ile	
				185					190					195	
Glu	Gln	Leu	Glu	Arg	Ala	Arg	Thr	Glu	Trp	Glu	Gln	Glu	His	Arg	
				200					205					210	
Thr	Thr	Cys	Glu	Ala	Phe	Gln	Leu	Gln	Glu	Phe	Asp	Arg	Leu	Thr	
				215					220					225	
Ile	Leu	Arg	Asn	Ala	Leu	Trp	Val	His	Cys	Asn	Gln	Leu	Ser	Met	
				230					235					240	
Gln	Cys	Val	Lys	Asp	Asp	Glu	Leu	Tyr	Glu	Glu	Val	Arg	Leu	Thr	
				245					250					255	
Leu	Glu	Gly	Cys	Asp	Val	Glu	Gly	Asp	Ile	Asn	Gly	Phe	Ile	Gln	
				260					265					270	
Ser	Lys	Ser	Thr	Gly	Arg	Glu	Pro	Pro	Ala	Pro	Val	Pro	Tyr	Gln	
				275					280					285	
Asn	Tyr	Tyr	Asp	Arg	Glu	Val	Thr	Pro	Leu	Ile	Gly	Ser	Pro	Ser	
				290					295					300	
Ile	Gln	Pro	Ser	Cys	Gly	Val	Ile	Lys	Arg	Phe	Ser	Gly	Leu	Leu	
				305					310					315	
His	Gly	Ser	Pro	Lys	Thr	Thr	Pro	Ser	Ala	Pro	Ala	Ala	Ser	Thr	
				320					325					330	
Glu	Thr	Leu	Thr	Pro	Thr	Pro	Glu	Arg	Asn	Glu	Leu	Val	Tyr	Ala	
				335					340					345	
Ser	Ile	Glu	Val	Gln	Ala	Thr	Gln	Gly	Asn	Leu	Asn	Ser	Ser	Ala	
				350					355					360	

Gln	Asp	Tyr	Arg	Ala	Leu	Tyr	Asp	Tyr	Thr	Ala	Gln	Asn	Ser	Asp
				365					370					375
Glu	Leu	Asp	Ile	Ser	Ala	Gly	Asp	Ile	Leu	Ala	Val	Ile	Leu	Glu
				380					385					390
Gly	Glu	Asp	Gly	Trp	Trp	Thr	Val	Glu	Arg	Asn	Gly	Gln	Arg	Gly
				395					400					405
Phe	Val	Pro	Gly	Ser	Tyr	Leu	Glu	Lys	Leu					
				410					415					

<210> 2
 <211> 2100
 <212> DNA
 <213> Mus Musculus

<400> 2
 caatattttca agctatacca agcatacaat caactccaag cttatgcccc 50
 agaagaagcg gaaggtctcg agcggcgcca attttaatca aagtgggaat 100
 attgctgata gctcattgtc cttcactttc actaacagta gcaacggtcc 150
 gaacctcata acaactcaaa caaattctca agcgctttca caaccaattg 200
 cctcctctaa cgttcatgat aacttcatga ataatgaaat cacggctagt 250
 aaaattgatg atggtaataa ttcaaaacca ctgtcacctg gttggacgga 300
 ccaaactgcg tataacgcgt ttggaatcac tacagggatg tttaatacca 350
 ctacaatgga tgatgtatat aactatctat tcgatgatga agatacccca 400
 ccaaacccaa aaaaagaggg tgggtcgacc cacgcgtccg gtccttcct 450
 catttcgctg ctgattctag ccccaaaca aacaggttga gcctttttcc 500
 tcctccggca gttgcctctg gcttgtggct gccttctgag cgtttcagac 550
 ggcgccggct gggagtggga gggagggcct gggctagccg cgctgggact 600
 gggacgtgct cctggctcct ggcccatgct cagccctgct tgaagcagga 650
 gtgctagcat ttgacacaac gcccttggag gatgatggcc cagctgcagt 700
 tccgagatgc cttctggtgc agggacttca cggccacac agggatatgag 750
 gtgctactgc agaggctgct ggacggcagg aagatgtgca aggatgtgga 800
 ggagctgctc agacagaggg cccaggcgga ggagaggtac gggaaggagc 850

tgggtgcagat tgcacgcaag gctggtggcc agacagagat gaattccctg 900
 aggacctcct ttgactccct gaagcagcaa acagagaatg tgggcagtgc 950
 acacatccag ctggccctgg ccctgctgta ggagctgcgg agcctggagg 1000
 agttccgaga gagacagaaa gagcagcgga agaagtatga ggccatcatg 1050
 gaccgtgtcc agaagagcaa gttgtcgtc tacaagaaga ccatggagtc 1100
 caagaaggca tatgaccaga agtgcaggga tgcagatgat gctgagcagg 1150
 ctttcgagcg tgtgagtgcc aatggccacc agaagcaagt agaaaagagc 1200
 cagaacaaag ccaagcagtg caaggagtca gccacagagg cagaaagagt 1250
 gtacaggcaa aatatcgaa aactggagag agcgaggacc gagtgggagc 1300
 aggagcaccg gactacctgt gaggccttcc agttgcagga gtttgaccgg 1350
 ctcaccatcc tccgcaatgc cctgtgggtg cactgtaacc agctctccat 1400
 gcagtgtgtc aaggatgatg agctctatga ggaagtgcgg ctgacccttg 1450
 agggctgtga tgtggaaggt gacatcaatg gcttcatcca gtccaagagc 1500
 actggcagag agccccagc tccggtgcct tatcagaact actatgacag 1550
 ggaggtgacc ccaactgattg gcagccctag catccagccc tcctgcggtg 1600
 tgataaagag gttctctggg ctgctacatg gaagtcccaa gaccacacct 1650
 tctgctcctg ctgcttccac agagactctg actcccaccc ctgagcggaa 1700
 tgagttggtc tacgcatcca tcgaagtgca ggcgaccag ggaaacctta 1750
 actcatcagc ccaggactac cgggcactct acgactacac tgcacagaat 1800
 tctgatgagc tggacatttc cgcgggagac atcctggcgg tcatcctgga 1850
 aggggaggat ggctggtgga ctgtggagcg gaacggacaa cgtggctttg 1900
 tccctgggtc gtacttgag aagctctgag gaaaggctag cagtctccac 1950
 atacctccgc cctgactgtg aggtcaggac tgtttctttc catcaccgcc 2000
 caggcctcac ggggccagaa ccaagcccgg tgggtgctggg catgggctgg 2050
 gtgctggcta ctctcaataa atgtctccca gaaggaaaaa aaaaaaaaaa 2100

<210> 3
 <211> 48
 <212> PRT
 <213> Mus Musculus

 <400> 3
 Leu Tyr Asp Tyr Thr Ala Gln Asn Ser Asp Glu Leu Asp Ile Ser
 1 5 10 15
 Ala Gly Asp Ile Leu Ala Val Ile Leu Glu Gly Glu Asp Gly Trp
 20 25 30
 Trp Thr Val Glu Arg Asn Gly Gln Arg Gly Phe Val Pro Gly Ser
 35 40 45
 Tyr Leu Arg

<210> 4
 <211> 50
 <212> PRT
 <213> Homo sapien

 <400> 4
 Leu Tyr Gln Tyr Ile Gly Gln Asp Val Asp Glu Leu Ser Phe Asn
 1 5 10 15
 Val Asn Glu Val Ile Glu Ile Leu Ile Glu Asp Ser Ser Gly Trp
 20 25 30
 Trp Lys Gly Arg Leu His Gly Gln Glu Gly Leu Phe Pro Gly Asn
 35 40 45
 Tyr Val Glu Lys Ile
 50

<210> 5
 <211> 50
 <212> PRT
 <213> Homo sapien

 <400> 5
 Leu Tyr Asp Tyr Gln Glu Lys Ser Pro Arg Glu Val Thr Met Lys
 1 5 10 15
 Lys Gly Asp Ile Leu Thr Leu Leu Asn Ser Thr Asn Lys Asp Trp
 20 25 30
 Trp Lys Val Glu Val Asn Asp Arg Gln Gly Phe Val Pro Ala Ala
 35 40 45

Tyr Val Lys Lys Leu
50

<210> 6
<211> 50
<212> PRT
<213> Homo sapien

<400> 6
Leu Tyr Asp Tyr Gln Gly Glu Gly Ser Asp Glu Leu Ser Phe Asp
1 5 10 15
Pro Asp Asp Ile Ile Thr Asp Ile Glu Met Val Asp Glu Gly Trp
20 25 30
Trp Arg Gly Gln Cys Arg Gly His Phe Gly Leu Phe Pro Ala Asn
35 40 45

Tyr Val Lys Leu Leu
50

<210> 7
<211> 48
<212> PRT
<213> Homo sapien

<400> 7
Leu Tyr Asp Tyr Gln Ala Ala Gly Asp Asp Glu Ile Ser Phe Asp
1 5 10 15
Pro Asp Asp Ile Ile Thr Asn Ile Glu Met Ile Asp Asp Gly Trp
20 25 30
Trp Arg Gly Val Cys Lys Gly Arg Tyr Gly Leu Phe Pro Ala Asn
35 40 45

Tyr Val Glu

<210> 8
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Amino acid epitope tag

<400> 8
Asp Tyr Lys Asp Asp Asp Asp Lys
1 5

<210> 9
 <211> 33
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 9
 cgcggatcca ccatgatggc ccagctgcag ttc 33

 <210> 10
 <211> 45
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 10
 gtacgcgtcg actcacttgt catcgctgctc cttgtagtcg agctt 45

 <210> 11
 <211> 18
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 11
 tgcctttctc tccacagg 18

 <210> 12
 <211> 36
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 12
 ctccttgagg ttctactagt gggggctggt gtcctg 36

 <210> 13
 <211> 39
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

<400> 13
gcggccgcac tagtatccag tctgtgctcc atctgttac 39

<210> 14
<211> 17
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 14
gcgtttggaa tcactac 17

<210> 15
<211> 41
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 15
ttatagttta gcggccgctc accggtagtc ctgggctgat g 41

<210> 16
<211> 37
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 16
gtacgcgtcg accgcactct acgactacac tgcacag 37

<210> 17
<211> 17
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 17
ctctggcgaa gaagtcc 17

<210> 18
<211> 32
<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 18

gatcgaattc ccagaacctc aaggagaact gc 32

<210> 19

<211> 38

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 19

gatcctcgag ttacacccgt gtccactctg ctggagga 38

<210> 20

<211> 20

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic oligopeptide

<400> 20

Gly	Phe	Asn	Leu	Arg	Ile	Gly	Arg	Pro	Lys	Gly	Pro	Arg	Asp	Pro
1				5					10					15

Pro	Ala	Glu	Trp	Thr
				20

<210> 21

<211> 19

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic oligopeptide

<400> 21

Gly	Phe	Gly	Asn	Arg	Phe	Ser	Lys	Pro	Lys	Gly	Pro	Arg	Asn	Pro
1				5					10					15

Pro	Ser	Ala	Trp
-----	-----	-----	-----

<210> 22

<211> 20

<212> PRT
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligopeptide

 <400> 22
 Gly Phe Gly Asn Arg Cys Gly Lys Pro Lys Gly Pro Arg Asp Pro
 1 5 10 15

 Pro Ser Glu Trp Thr
 20

 <210> 23
 <211> 20
 <212> PRT
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligopeptide

 <400> 23
 Gly Gly Val Leu Arg Ser Ile Ser Val Pro Ala Pro Pro Thr Leu
 1 5 10 15

 Pro Met Ala Asp Thr
 20

 <210> 24
 <211> 36
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 24
 gtatatgtcc tggccagccc atgggggttcc cagcag 36

 <210> 25
 <211> 36
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 25
 gcagggtcgac tctagattac acccgtgtcc actctg 36

 <210> 26

<211> 907

<212> PRT

<213> Saccharomyces Pombe

<400> 26

Met	Leu	Thr	Lys	Ser	Leu	Gln	Gly	Ser	Glu	Asp	Ala	Gly	Met	Asp
1				5					10					15
Ala	Leu	Met	Ser	Arg	Thr	Lys	Ser	Ser	Leu	Ser	Val	Leu	Glu	Ser
				20					25					30
Ile	Asp	Glu	Phe	Tyr	Ala	Lys	Arg	Ala	Ser	Ile	Glu	Arg	Glu	Tyr
				35					40					45
Ala	Ser	Lys	Leu	Gln	Glu	Leu	Ala	Ala	Ser	Ser	Ala	Asp	Ile	Pro
				50					55					60
Glu	Val	Gly	Ser	Thr	Leu	Asn	Asn	Ile	Leu	Ser	Met	Arg	Thr	Glu
				65					70					75
Thr	Gly	Ser	Met	Ala	Lys	Ala	His	Glu	Glu	Val	Ser	Gln	Gln	Ile
				80					85					90
Asn	Thr	Glu	Leu	Arg	Asn	Lys	Ile	Arg	Glu	Tyr	Ile	Asp	Gln	Thr
				95					100					105
Glu	Gln	Gln	Lys	Val	Val	Ala	Ala	Asn	Ala	Ile	Glu	Glu	Leu	Tyr
				110					115					120
Gln	Lys	Lys	Thr	Ala	Leu	Glu	Ile	Asp	Leu	Ser	Glu	Lys	Lys	Asp
				125					130					135
Ala	Tyr	Glu	Tyr	Ser	Cys	Asn	Lys	Leu	Asn	Ser	Tyr	Met	Arg	Gln
				140					145					150
Thr	Lys	Lys	Met	Thr	Gly	Arg	Glu	Leu	Asp	Lys	Tyr	Asn	Leu	Lys
				155					160					165
Ile	Arg	Gln	Ala	Ala	Leu	Ala	Val	Lys	Lys	Met	Asp	Ala	Glu	Tyr
				170					175					180
Arg	Glu	Thr	Asn	Glu	Leu	Leu	Leu	Thr	Val	Thr	Arg	Glu	Trp	Ile
				185					190					195
Asp	Arg	Trp	Thr	Glu	Val	Cys	Asp	Ala	Phe	Gln	His	Ile	Glu	Glu
				200					205					210
Tyr	Arg	Leu	Glu	Phe	Leu	Lys	Thr	Asn	Met	Trp	Ala	Tyr	Ala	Asn
				215					220					225
Ile	Ile	Ser	Thr	Ala	Cys	Val	Lys	Asp	Asp	Glu	Ser	Cys	Glu	Lys

				230					235					240
Ile	Arg	Leu	Thr	Leu	Glu	Asn	Thr	Asn	Ile	Asp	Glu	Asp	Ile	Thr
				245					250					255
Gln	Met	Ile	Gln	Asn	Glu	Gly	Thr	Gly	Thr	Thr	Ile	Pro	Pro	Leu
				260					265					270
Pro	Glu	Phe	Asn	Asp	Tyr	Phe	Lys	Glu	Asn	Gly	Leu	Asn	Tyr	Asp
				275					280					285
Ile	Asp	Gln	Leu	Ile	Ser	Lys	Ala	Pro	Ser	Tyr	Pro	Tyr	Ser	Ser
				290					295					300
Ser	Arg	Pro	Ser	Ala	Ser	Ala	Ser	Leu	Ala	Ser	Ser	Pro	Thr	Arg
				305					310					315
Ser	Ala	Phe	Arg	Pro	Lys	Thr	Ser	Glu	Thr	Val	Ser	Ser	Glu	Val
				320					325					330
Val	Ser	Ser	Pro	Pro	Thr	Ser	Pro	Leu	His	Ser	Pro	Val	Lys	Pro
				335					340					345
Val	Ser	Asn	Glu	Gln	Val	Glu	Gln	Val	Thr	Glu	Val	Glu	Leu	Ser
				350					355					360
Ile	Pro	Val	Pro	Ser	Ile	Gln	Glu	Ala	Glu	Ser	Gln	Lys	Pro	Val
				365					370					375
Leu	Thr	Gly	Ser	Ser	Met	Arg	Arg	Pro	Ser	Val	Thr	Ser	Pro	Thr
				380					385					390
Phe	Glu	Val	Ala	Ala	Arg	Pro	Leu	Thr	Ser	Met	Asp	Val	Arg	Ser
				395					400					405
Ser	His	Asn	Ala	Glu	Thr	Glu	Val	Gln	Ala	Ile	Pro	Ala	Ala	Thr
				410					415					420
Asp	Ile	Ser	Pro	Glu	Val	Lys	Glu	Gly	Lys	Asn	Ser	Glu	Asn	Ala
				425					430					435
Ile	Thr	Lys	Asp	Asn	Asp	Asp	Ile	Ile	Leu	Ser	Ser	Gln	Leu	Gln
				440					445					450
Pro	Thr	Ala	Thr	Gly	Ser	Arg	Ser	Ser	Arg	Leu	Ser	Phe	Ser	Arg
				455					460					465
His	Gly	His	Gly	Ser	Gln	Thr	Ser	Leu	Gly	Ser	Ile	Lys	Arg	Lys
				470					475					480
Ser	Ile	Met	Glu	Arg	Met	Gly	Arg	Pro	Thr	Ser	Pro	Phe	Met	Gly

				485					490					495
Ser	Ser	Phe	Ser	Asn	Met	Gly	Ser	Arg	Ser	Thr	Ser	Pro	Thr	Lys
				500					505					510
Glu	Gly	Phe	Ala	Ser	Asn	Gln	His	Ala	Thr	Gly	Ala	Ser	Val	Gln
				515					520					525
Ser	Asp	Glu	Leu	Glu	Asp	Ile	Asp	Pro	Arg	Ala	Asn	Val	Val	Leu
				530					535					540
Asn	Val	Gly	Pro	Asn	Met	Leu	Ser	Val	Gly	Glu	Ala	Pro	Val	Glu
				545					550					555
Ser	Thr	Ser	Lys	Glu	Glu	Asp	Lys	Asp	Val	Pro	Asp	Pro	Ile	Ala
				560					565					570
Asn	Ala	Met	Ala	Glu	Leu	Ser	Ser	Ser	Met	Arg	Arg	Arg	Gln	Ser
				575					580					585
Thr	Ser	Val	Asp	Asp	Glu	Ala	Pro	Val	Ser	Leu	Ser	Lys	Thr	Ser
				590					595					600
Ser	Ser	Thr	Arg	Leu	Asn	Gly	Leu	Gly	Tyr	His	Ser	Arg	Asn	Thr
				605					610					615
Ser	Ile	Ala	Ser	Asp	Ile	Asp	Gly	Val	Pro	Lys	Lys	Ser	Thr	Leu
				620					625					630
Gly	Ala	Pro	Pro	Ala	Ala	His	Thr	Ser	Ala	Gln	Met	Gln	Arg	Met
				635					640					645
Ser	Asn	Ser	Phe	Ala	Ser	Gln	Thr	Lys	Gln	Val	Phe	Gly	Glu	Gln
				650					655					660
Arg	Thr	Glu	Asn	Ser	Ala	Arg	Glu	Ser	Leu	Arg	His	Ser	Arg	Ser
				665					670					675
Asn	Met	Ser	Arg	Ser	Pro	Ser	Pro	Met	Leu	Ser	Arg	Arg	Ser	Ser
				680					685					690
Thr	Leu	Arg	Pro	Ser	Phe	Glu	Arg	Ser	Ala	Ser	Ser	Leu	Ser	Val
				695					700					705
Arg	Gln	Ser	Asp	Val	Val	Ser	Pro	Ala	Pro	Ser	Thr	Arg	Ala	Arg
				710					715					720
Gly	Gln	Ser	Val	Ser	Gly	Gln	Gln	Arg	Pro	Ser	Ser	Ser	Met	Ser
				725					730					735
Leu	Tyr	Gly	Glu	Tyr	Asn	Lys	Ser	Gln	Pro	Gln	Leu	Ser	Met	Gln

740										745					750				
Arg	Ser	Val	Ser	Pro	Asn	Pro	Leu	Gly	Pro	Asn	Arg	Arg	Ser	Ser					
				755					760					765					
Ser	Val	Leu	Gln	Ser	Gln	Lys	Ser	Thr	Ser	Ser	Asn	Thr	Ser	Asn					
				770					775					780					
Arg	Asn	Asn	Gly	Gly	Tyr	Ser	Gly	Ser	Arg	Pro	Ser	Ser	Glu	Met					
				785					790					795					
Gly	His	Arg	Tyr	Gly	Ser	Met	Ser	Gly	Arg	Ser	Met	Arg	Gln	Val					
				800					805					810					
Ser	Gln	Arg	Ser	Thr	Ser	Arg	Ala	Arg	Ser	Pro	Glu	Pro	Thr	Asn					
				815					820					825					
Arg	Asn	Ser	Val	Gln	Ser	Lys	Asn	Val	Asp	Pro	Arg	Ala	Thr	Phe					
				830					835					840					
Thr	Ala	Glu	Gly	Glu	Pro	Ile	Leu	Gly	Tyr	Val	Ile	Ala	Leu	Tyr					
				845					850					855					
Asp	Tyr	Gln	Ala	Gln	Ile	Pro	Glu	Glu	Ile	Ser	Phe	Gln	Lys	Gly					
				860					865					870					
Asp	Thr	Leu	Met	Val	Leu	Arg	Thr	Gln	Glu	Asp	Gly	Trp	Trp	Asp					
				875					880					885					
Gly	Glu	Ile	Ile	Asn	Val	Pro	Asn	Ser	Lys	Arg	Gly	Leu	Phe	Pro					
				890					895					900					
Ser	Asn	Phe	Val	Gln	Thr	Val													
				905															

<210> 27
 <211> 4
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Any amino acid

<400> 27
 Pro Xaa Xaa Pro
 1

<210> 28
 <211> 1613
 <212> DNA
 <213> Homo sapien

<400> 28

acgatcacta tagggcggaat tgggcctcta gatgcatgct cgagcggccg 50
ccagtgtgat ggatatctgc agaattcggc ttccatccta atacgactca 100
ctatagggct cgagcggccg cccgggcagg tctagaattc agcggccgct 150
gaattctctt tttcctcccc tcagaagctc ctctctggct cgtggctgcc 200
ttctgagtgt tgcagacggc gccggccggg aaggggggccc tgggccagcc 250
ctgccaggac tgggacgctg ctgctgacgc ctggccctcc atcaggccag 300
cctgtggcag gagagtgagc tttgccgcgg cagacgcctg aggatgatgc 350
cccagctgca gttcaaagat gccttttggg gcagggactt cacagcccac 400
acgggctacg aggtgctgct gcagcggcctt ctggatggca ggaagatgtg 450
caaagacatg gaggagctac tgaggcagag ggcccaggcg gaggagcgg 500
acgggaagga gctggtgcag atcgcacgga aggcagggtg ccagacggag 550
atcaactccc tgagggcctc ctttgactcc ttgaagcagc aaatggagaa 600
tgtgggcagc tcacacatcc agctggccct gaccctgcgt gaggagctgc 650
ggagtctcga ggagtctcgt gagaggcaga aggagcagag gaagaagggc 700
atggctgtcc cgagacagag tgactgcatg gaagtgaagt ccccatcatg 750
ggagtatgag gccgtcatgg accgggtcca gaagagcaag ctgtcgctct 800
acaagaaggc catggagtcc aagaagacat acgagcagaa gtgccgggac 850
gcggacgacg cggagcaggc cttcgagcgc attagcgcca acggccacca 900
gaagcagggtg gagaagagtc agaacaaagc caggcagtgc aaggactcgg 950
ccaccgaggc agagcgggta tacaggcaga gcattgcgca gctggagaag 1000
gtccgggctg agtgggagca ggagcaccgg accacctgtg aggcctttca 1050
gctgcaagag tttgaccggc tgaccattct ccgcaacgcc ctgtgggtgc 1100
acagtaacca gctctccatg cagtgtgtca aggatgatga gctctacgag 1150
gaagtgcggc tgacgctgga aggctgcagc atagacgccg acatcgacag 1200
tttcatccag gccaagagca cgggcacaga gccccccagg ttctctggac 1250

tgctgcacgg aagtcccaag accacttcgt cagcttctgc tggctccaca 1300
 gagaccctga cccccacccc cgagcggaat gaggggtgtct acacagccat 1350
 cgcagtgcag gagatacagg gaaacccggc ctcaccagcc caggactacc 1400
 gggcgctcta cgattataca gcgcagaacc cagatgagct ggacctgtcc 1450
 gcgggagaca tcctggaagg ggaggatggc tggaggactg tggagaggaa 1500
 cgggcagcgt ggcttcgtcc ctgggttccta cctggagaag ctttgaggga 1550
 aggccaggag ccccttcgga cctccgccct gccagtggag ccagcagtgc 1600
 ccccgact gtc 1613

<210> 29
 <211> 400
 <212> PRT
 <213> Homo sapien

<400> 29
 Met Met Pro Gln Leu Gln Phe Lys Asp Ala Phe Trp Cys Arg Asp
 1 5 10 15
 Phe Thr Ala His Thr Gly Tyr Glu Val Leu Leu Gln Arg Leu Leu
 20 25 30
 Asp Gly Arg Lys Met Cys Lys Asp Met Glu Glu Leu Leu Arg Gln
 35 40 45
 Arg Ala Gln Ala Glu Glu Arg Tyr Gly Lys Glu Leu Val Gln Ile
 50 55 60
 Ala Arg Lys Ala Gly Gly Gln Thr Glu Ile Asn Ser Leu Arg Ala
 65 70 75
 Ser Phe Asp Ser Leu Lys Gln Gln Met Glu Asn Val Gly Ser Ser
 80 85 90
 His Ile Gln Leu Ala Leu Thr Leu Arg Glu Glu Leu Arg Ser Leu
 95 100 105
 Glu Glu Phe Arg Glu Arg Gln Lys Glu Gln Arg Lys Lys Gly Met
 110 115 120
 Ala Val Pro Arg Gln Ser Asp Cys Met Glu Val Lys Ser Pro Ser
 125 130 135
 Trp Glu Tyr Glu Ala Val Met Asp Arg Val Gln Lys Ser Lys Leu

	140		145		150
Ser Leu Tyr Lys	Lys Ala Met Glu Ser	Lys Lys Thr Tyr Glu Gln			
	155	160			165
Lys Cys Arg Asp	Ala Asp Asp Ala Glu	Gln Ala Phe Glu Arg Ile			
	170	175			180
Ser Ala Asn Gly	His Gln Lys Gln Val	Glu Lys Ser Gln Asn Lys			
	185	190			195
Ala Arg Gln Cys	Lys Asp Ser Ala Thr	Glu Ala Glu Arg Val Tyr			
	200	205			210
Arg Gln Ser Ile	Ala Gln Leu Glu Lys	Val Arg Ala Glu Trp Glu			
	215	220			225
Gln Glu His Arg	Thr Thr Cys Glu Ala	Phe Gln Leu Gln Glu Phe			
	230	235			240
Asp Arg Leu Thr	Ile Leu Arg Asn Ala	Leu Trp Val His Ser Asn			
	245	250			255
Gln Leu Ser Met	Gln Cys Val Lys Asp	Asp Glu Leu Tyr Glu Glu			
	260	265			270
Val Arg Leu Thr	Leu Glu Gly Cys Ser	Ile Asp Ala Asp Ile Asp			
	275	280			285
Ser Phe Ile Gln	Ala Lys Ser Thr Gly	Thr Glu Pro Pro Arg Phe			
	290	295			300
Ser Gly Leu Leu	His Gly Ser Pro Lys	Thr Thr Ser Ser Ala Ser			
	305	310			315
Ala Gly Ser Thr	Glu Thr Leu Thr Pro	Thr Pro Glu Arg Asn Glu			
	320	325			330
Gly Val Tyr Thr	Ala Ile Ala Val Gln	Glu Ile Gln Gly Asn Pro			
	335	340			345
Ala Ser Pro Ala	Gln Asp Tyr Arg Ala	Leu Tyr Asp Tyr Thr Ala			
	350	355			360
Gln Asn Pro Asp	Glu Leu Asp Leu Ser	Ala Gly Asp Ile Leu Glu			
	365	370			375
Gly Glu Asp Gly	Trp Trp Thr Val Glu	Arg Asn Gly Gln Arg Gly			
	380	385			390
Phe Val Pro Gly	Ser Tyr Leu Glu Lys Leu				

<210> 30
<211> 42
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 30
cagttcggat ccatgatgct gcagaggctg ctggacggca gg 42

<210> 31
<211> 42
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 31
cagttcggat ccatgatgga gaggtacggg aaggagctgg tg 42

<210> 32
<211> 42
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 32
cagttcggat ccatgatgtc ctttgactcc ctgaagcagc aa 42

<210> 33
<211> 42
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 33
cagttcggat ccatgatgga gctgcggagc ctggaggagt tc 42

<210> 34
<211> 42
<212> DNA
<213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

 <400> 34
 cagttcggat ccatgatggt ccagaagagc aagttgtcgc tc 42

 <210> 35
 <211> 42
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 35
 cagttcggat ccatgatggc agatgatgct gagcaggcct tc 42

 <210> 36
 <211> 33
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 36
 acgtcactcg agtcacttgt catcgtcgct ctt 33

 <210> 37
 <211> 42
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 37
 ttgacctcga gtcacaccg ctcaggggtg ggagtcagag tc 42

 <210> 38
 <211> 40
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 38
 ttgacctcga gtcacacag cccagagaac ctctttatca 40

 <210> 39

<211> 45
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 39
 ttgacctcga gtcatacagtc atagtagttc tgataaggca ccgga 45

 <210> 40
 <211> 48
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 40
 ttgacctcga gtcatacagtc accttcaca tcacagccct caagggtc 48

 <210> 41
 <211> 48
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 41
 ttgacctcga gtcatacagga gagctggtta cagtgcaccc acagggtc 48

 <210> 42
 <211> 47
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 42
 ttgacctcga gtcatacactc acgcagggcc agggccagct ggatgtg 47

 <210> 43
 <211> 29
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

<400> 43
 gtctgaggag ctccgccgca gccttgac 29

<210> 44
 <211> 34
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 44
 ccttcccgta cgccgccgcc gcctgagctc tctg 34

<210> 45
 <211> 32
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 45
 ggccaccagc cgcggctgca atctgcacga gc 32

<210> 46
 <211> 34
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 46
 caggagtc aaggcgccg ccaggagtt catc 34

<210> 47
 <211> 34
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 47
 ctggatgtgc gcgctggccg cagcctctgt ttgc 34

<210> 48
 <211> 37
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

 <400> 48
 cctccaagct tcgcagcgcc gcagccaggg ccagggc 37

 <210> 49
 <211> 34
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 49
 ccgctgctct ttcgctgccg ctcggaattc ctcc 34

 <210> 50
 <211> 35
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 50
 cttctggaca cgggccgagg cggcctcata cttct 35

 <210> 51
 <211> 32
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 51
 ggtcttcttg gcggccgcaa gcttgctctt ct 32

 <210> 52
 <211> 42
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 52
 gcatccctgc acgccgcggc atataagctt tcttggactc ca 42

<210> 53
 <211> 42
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 53
 gtggccattg gcactcgcag ccgcgaaagc ttgctcagca tc 42

 <210> 54
 <211> 45
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 54
 ggctttgttc tggctctttg ctgctgcctt ctggtgacca ttggc 45

 <210> 55
 <211> 42
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 55
 cctcgtctc tccagttgtt caatagctgc cgcgtacact ct 42

 <210> 56
 <211> 31
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 56
 ctctgctcc gctcgggtcc gagctctctc c 31

 <210> 57
 <211> 37
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

<400> 57
 ggatggtgag ccggtctgcc tcctgcagct ggaggcc 37

<210> 58
 <211> 36
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 58
 cggaggatgg tggcccggtc gaattcctgc aactgg 36

<210> 59
 <211> 42
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 59
 atggagagct gggtacagtg caccgccaat gcattgcgga gg 42

<210> 60
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 60
 tccacatcct tggacatctt cctg 24

<210> 61
 <211> 41
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 61
 catcatctgc atccctggcc ttctgggtcat atcccttctt g 41

<210> 62
 <211> 24
 <212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 62

ggctgactcc ttggactgct tggc 24

<210> 63

<211> 27

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 63

gaaggcctcg gaggtagtcc ggtgctc 27

<210> 64

<211> 28

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 64

atgggagagct ggttggagtg cacccaca 28

<210> 65

<211> 30

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 65

catcatcctt gacggactgc atggagagct 30

<210> 66

<211> 36

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 66

gatgtcacct tccacatcgg agccctcaag ggtcag 36

<210> 67
 <211> 33
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 67
 ccctttgggt cgaccgatgg ccaagttgaa gcc 33

 <210> 68
 <211> 34
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 68
 aggatctcgg ggccctttgg cccttccgat gcgc 34

 <210> 69
 <211> 31
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 69
 ctggaggatc tcgaggtgct ttgggccttc c 31

 <210> 70
 <211> 30
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 70
 ggaggatctc gggccccttt gggccttccg 30

 <210> 71
 <211> 34
 <212> DNA
 <213> Artificial Sequence

 <220>

<223> Synthetic oligonucleotide probe

<400> 71

ctgcaggagg atccgcgggc cctttgggcc ttcc 34

<210> 72

<211> 31

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 72

gtccactctg cagcaggatc ccggggccct t 31

<210> 73

<211> 34

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 73

gttacacccg tgtcgctct gcaggaggat cccg 34